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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/525,458	09/28/2005	Kazuo Kubota	0425-1178PUS1	3849

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EXAMINER	
CORDRAY, DENNIS R	
ART UNIT	**PAPER NUMBER**
1791	

NOTIFICATION DATE	DELIVERY MODE
11/24/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/525,458	KUBOTA ET AL.	
	Examiner	Art Unit	
	DENNIS CORDRAY	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 August 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,7-10,13,14 and 18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,7-10,13,14 and 18* is/are rejected.

7)☒ Claim(s) *18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5/25/05, 7/20/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's amendments, filed 8/11/208, have overcome the rejection(s) of claim(s) over Niinikoski et al and over Niinikoski et al in view of Auhorn et al. Therefore, the rejections have been withdrawn. However, due to the amendments, new grounds of rejection are made as detailed below.

Regarding the preferred and exemplified polymers of Niinikoski et al, disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments. In re Susi, 440 F.2d 442, 169 USPQ 423 (CCPA 1971). "A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use." In re Gurley, 27 F.3d 551, 554, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994) Furthermore, "[t]he prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed…." In re Fulton, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004).

The disclosure of Niinikoski et al embodies polymers comprising 100% vinyl acetate.

Claim Objections

Claim 18 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim, or amend the claim to place the claim in proper dependent

form, or rewrite the claim in independent form. Claim 18 recites that the emulsion contains particles (B) in an amount of 5 to 60 wt-%. However, Claim 18 depends from Claim 1, which recites a solids content of the emulsion from 7.9 to 39 (assumed to be wt-%). Claim 18 thus expands rather than limits Claim 1.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 7-10, 13, 14 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 9 and 10 recite a method requiring addition of a polymer emulsion comprising a cationic starch (A) and polymer particles, wherein the polymer particles are polymerized in the presence of a cationic starch (A). It is not clear if the first and second cationic starch (A) are the same cationic starch, different cationic starches having the same properties, or if additional cationic starch (A) is added following the polymerization to make the emulsion. This rejection might be overcome by changing the second recitation of “a cationic starch” to “the cationic starch” or “said cationic starch.”

Claims 1, 9 and 10 also recite that the emulsion has a solid content of 7.9 to 39 but fail to recite whether the solid content is weight, weight percent, moles, mole percent, volume, volume percent, or some other unit. Weight percent is assumed for the purpose of this examination.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 9, 10, 13, 14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Niinikoski et al (6753377) in view of Gramera et al (3632585) and as evidenced by Brandrup et al (Polymer Handbook, 3rd ed).

Claims 1, 9, 10 and 18: Niinikoski et al discloses a method of making paper comprising adding a polymer dispersion to a pulp at the wet end of a paper machine (mixing a pulp slurry and a polymer emulsion at the time of papermaking) (Abs; col 1, lines 4-55; col 2, lines 13-16; col 5, lines 21-25). The dispersion is formed by polymerizing from 60 to 95% of a monomer mixture in the presence of from 5 to 40% of a cationic starch having a degree of cationic substitution from 0.01 to 1. Using the preferred cationizing species, 2,3-epoxypropyltrimethyl ammonium chloride, the nitrogen content of the disclosed cationized starch is calculated to be from 0.09 to 4.5 wt-%, which includes the claimed nitrogen content (col 3, lines 28-56). The proportion of monomers, and thus polymer made, to starch significantly overlays the claimed proportion.

The monomers, which can be 100% vinyl acetate monomers in some embodiments, are polymerized by dispersion polymerization to form an aqueous polymer dispersion comprising polyvinyl acetate and cationic starch and having a solids content of from 10% to 60% (col 4, lines 8-67). Polyvinyl acetate homopolymers have a Tg of 28 °C to 39 °C (see Brandrup et al, p V/72 if evidence is needed).

Niinikoski et al does not disclose filtering the stock on a wire mesh to drain water and form a paper layer, but does disclose making paper on a gap former machine, which filters the papermaking slurry through a wire mesh. Niinikoski et al also discloses examples wherein paper is made on a paper machine, thus implicitly describing an apparatus that drains the pulp through a screen. Alternatively, such process is well known in the conventional art, as admitted by Applicant on p 7 of the response received 10/24/2007, and would have been obvious to one of ordinary skill.

Niinikoski et al does not disclose an emulsion of the polymer particles and starch. However, the disclosed composition is substantially identical to the claimed composition, an aqueous mixture comprising a cationic starch and polymer particles, thus will form the claimed emulsion or, at least, formation of an emulsion would have been obvious to one of ordinary skill in the art. Alternatively, using an emulsion would have been obvious to one of ordinary skill in the art.

Niinikoski et al does not disclose the particle size of the vinyl acetate polymers.

Gramera et al discloses vinyl acetate homopolymers and copolymers used in papermaking. The polymers have a particle size maintained in the range of 0.2 to 1.2 microns to prevent their agglomeration into unusable gels or flocs (col 1, lines 11-36; col 3, lines 53 to 65; col 4, lines 45-54).

The art of Niinikoski et al, Gramera et al and the instant invention is analogous as pertaining to vinyl acetate polymers used in papermaking. It would have been obvious to one of ordinary skill in the art to use a polymer particle size in the claimed range in the process of Niinikoski et al in view of Gramera et al as a size that prevents the

particles from agglomerating and becoming unusable. Absent convincing evidence of unobvious properties, using a starch solution having any viscosity would have been obvious as a functionally equivalent option.

The disclosed method and composition significantly overlaps the claimed subject matter, thus improving the stiffness of the paper would have been obvious for reasons previously given.

Claims 13 and 14: Anionic monomers and nonionic-hydrophilic group containing monomers are not required by Niinikoski et al, although acrylonitrile is recited as a suitable monomer or comonomer (hydrophilic) (col 3, lines 28-29).

Claims 7 and 8 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Niinikoski et al.

Claim 7 is product-by-process claim. The product of Niinikoski et al appears to be the same as or similar to the claimed product, a paper or pulp sheet comprising a natural or synthetic cationic polymer and vinyl fatty ester polymer, although produced by a different process. The burden therefore shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir.1983). “In the event any differences can be shown for the product of the product-by-process claim 7 as opposed to the product taught by Niinikoski et al et al, such differences would have been obvious to one of ordinary skill in the art as a routine modification of the

product in the absence of a showing of unexpected results: see also In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)"

Claim 8: An example is disclosed wherein the dispersion is added in the amount of 1.5%, based on active size (solids content) to dry pulp (col 6, lines 55-67; col 7, lines 1-14, Example 5). Considering the 25% filler and 0.8% pulp starch added in the example as part of the sheet weight, the amount of dispersion added is within the claimed range.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DENNIS CORDRAY whose telephone number is (571)272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dennis Cordray/
Examiner, Art Unit 1791

/Eric Hug/
Primary Examiner, Art Unit 1791